

1.049,301



PATENT SPECIFICATION

DRAWINGS ATTACHED

1.049,301

Date of Application and filing Complete Specification: Jan. 11, 1965.

No. 1160/65.

Application made in Belgium (No. 643,362) on Feb. 4, 1964.

Complete Specification Published: Nov. 23, 1966.

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Index at acceptance:—A3 V (1A5X, 7AX, 9B2X)

Int. Cl.:—A 41 d 13/00

COMPLETE SPECIFICATION

Appliance for Protecting the Human Body

I, EDMOND MERCIER, of Belgian nationality, of 117 rue Cesar de Paepe, Jumet, Belgium, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to an appliance for protecting the human body and has for its object to provide such an appliance for protecting the upper parts of the human body against falling objects and overloads, more particularly the cervical dorsal, lumbar and scapular regions.

In accordance with the invention, the appliance comprises a rigid back-plate adapted to cover the shoulders and upper part of the back, a belt adapted to rest on the hips, and rigid jointed connecting pieces between the back-plate and belt for transferring any impacts and loads from the shoulders to the hips, while permitting the normal body movements called for by the work.

The back-plate may be fixed to two shoulder-straps which pass over the shoulders and are hinged under the arms to the ends of a curved cross-member pivoting on the belt. The cross-member pivot may be well-placed at the back of the belt, and the front ends of the shoulder-straps joined to the front of the belt by means of braces.

The belt may comprise two rigid parts fitting over the hips and connected at the back by a flat rod sliding into keepers fixed on the rigid parts, so that the belt can easily be put on and adjusted to the waist, the rod being held firm in the keepers when the belt is fastened in front. The cross-member pivot may be supported by the rod.

The rigid back-plate, the rigid parts of the belt, and the rigid connecting parts may be of metal, a synthetic substance or strong leather, and can be lined with a flexible material when they are intended to rest on the body. However, the back-plate can also be

[Price 4s. 6d.]

designed so as not to rest on the shoulders when in the normal position.

By transferring the impacts or loads from the shoulders to the hips, the appliance described eliminates dangerous strains on the backbone, as well as any traumatism of the backbone, ribs or trunk.

In order that the invention may be well understood there will now be described one embodiment thereof, given by way of example only, reference being had to the accompanying drawing, in which:

Figures 1, 2, and 3 show a front, back and side view of a protective appliance being worn.

The appliance includes a back-plate 1 covering the shoulders and upper part of the back, made of a rigid substance such as metal, a synthetic substance or strong leather, in this case light metal, a belt 2 consisting of two rigid parts 3 fitting over the crest of the ilium, and straps 4 for fastening the belt. Between the back-plate and the belt are rigid hinged pieces for transferring from the shoulders to the hips any impacts or loads placing a strain on the backbone. These hinged pieces consist of two shoulder-straps 5 and a cross-member 6. The shoulder-straps, to which the back-plate is fixed, pass over the shoulders and are connected, under the arms, to the ends of the cross-member by lateral joints 7 (free-moving, or with stops or checks). By adding a rigid piece (brace) between 5 and 6, the movement of joint 7 can be abolished and resistance to the shoulder-load can be increased.

The shoulder-straps, or the back-plate, are joined to the belt, in front, by braces 8. The cross-member, curved into elbow shape to meet the shoulder-straps, can make a free, limited or checked movement around a pivot placed in the back of the belt.

This pivot is supported by a flat rod 9 which is straight or slightly curved outwards and is somewhat elastic. The rod slides into keepers 10 fixed to the rigid parts 3 of the belt. This arrangement enables the belt to be put on

easily and adjusted to the waist. When the belt is fastened with straps 4 or some equivalent means such as buckles, laces or hooks, the rod is held firmly in the chosen position in keepers 10, so that the belt sits well on the hips.

5 Inside, the various parts of the appliance, in particular the belt and shoulder-straps, are lined with a flexible material. It is preferable that the back-plate should also be so lined as 10 at 11, even if it is not normally in direct contact with the shoulders.

The effect of the lateral joints connecting the shoulder-straps to the cross-member, and of the pivoting of the latter, is to permit all 15 the body movement called for by the work, in particular by work in mines or quarries, loading ships carrying medium or heavy loads on the back—or by any other work placing a strain on the backbone.

20 WHAT I CLAIM IS:—

1.—An appliance for protecting the upper part of the human body against falling objects and overloads, comprising a rigid back-plate adapted to cover the shoulders and upper part 25 of the back, a belt adapted to rest on the hips, and rigid jointed connecting pieces between the back-plate and belt for transferring any impacts and loads from the shoulders to the hips, while permitting the normal body movements 30 required by the work.

2.—An appliance according to claim 1, wherein the back-plate is fixed to two shoulder-straps which are adapted to pass over the shoulders and are hinged in a regoin position 35 when the appliance is worn, under the

arms to the ends of a curved cross-member pivoted on the belt.

3.—An appliance according to claim 2, wherein the pivot of the cross-member is placed at the back of the belt. 40

4.—An appliance according to claim 2 or claim 3, wherein flexible braces connect the front ends of the shoulder-straps to the front of the belt.

5.—An appliance according to any of claims 2 to 4, wherein the belt comprises two rigid parts adapted to sit on the hips, joined at the back by a flat rod sliding into keepers fixed on the rigid parts, so that the belt can easily be put on and adjusted to the waist, the rod 50 being held firmly in the keepers when the belt is fastened in front.

6.—An appliance according to claim 5, wherein the pivot of the cross-member is carried by the rod. 55

7.—An appliance according to any of the preceding claims, wherein the back-plate, parts of the belt, and connecting pieces are of a rigid substance such as metal, a synthetic substance or strong leather, optionally lined 60 with a flexible material.

8.—A protective appliance for the human body, substantially as herein described with reference to the accompanying drawing.

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Fig. 1.

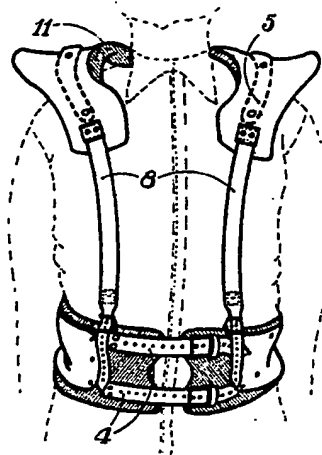


Fig. 2.

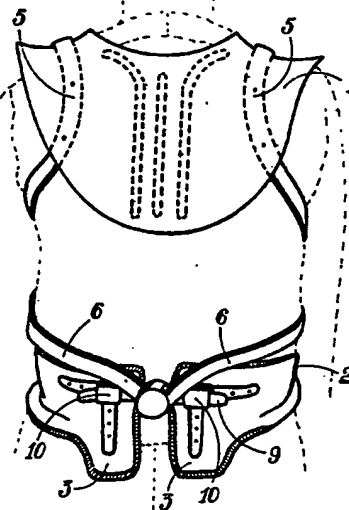


Fig. 3.

